APPENDIX D

CSU Long Beach PD

SMS Text-to-9-1-1 via Web Interface

Test Results

November 20, 2013

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Test Cases

1. Verify PSAP procedures in place when non-test SMS 9-1-1 text is delivered
2. Verify test 9-1-1 SMS text is delivered to correct PSAP and rebid capability
3. Verify action if PSAP does not respond to test 9-1-1 SMS text
4. Verify 2 simultaneous SMS 9-1-1 text can be handled by one call taker
5. Verify bounce back message delivered when third 9-1-1 SMS text is sent
6. Verify text conversation is still up if cell phone is powered down and powered up
7. Verify texter receives bounce back if standing inside CSU Long Beach PD's jurisdiction but Cell tower centroid is in different PSAP jurisdiction
8. Verify 9-1-1 SMS text will be delivered to CSU Long Beach PD if texter is standing outside CSU Long Beach PD's jurisdiction but the cell tower centroid is within CSU Long Beach PD's jurisdiction
9. Verify CSU Long Beach PD will hear audio tone when new text is received
10. Verify 9-1-1 SMS texter receives a bounce back when added to deny list
11. Verify 9-1-1 SMS texter receives a bounce back when PSAP has provisioned a Time of Day
12. Verify 9-1-1 SMS texter receives a bounce back when PSAP is not logged in on GEM9-1-1

CASE #1	Non test Text is sent to CSU Long Beach PD
Objective/ Description	This test verifies that when CSU Long Beach PD receives a non-test text they will manually send canned bounce back response Text.
Resources	Texter in field within CSU Long Beach PD's jurisdiction. Call taker to receive text TCS to monitor text session
Test Setup	1. Verify Texter is ready 2. Send test SMS 9-1-1 Text to verify bounce back 3. Verify TCC is provisioned and ready 4. Verify the target PSAP is available and logged into GEM911. 5. Verizon Wireless/TCS turn on 9-1-1 texting for CSU Long Beach PD
Procedure	1. Text message "I have a flat tire" 2. Call taker should recognized this is not part of our testing (because the text does not start with this "is a test") and reply back with the canned bounce back message (should be same message they would see from Verizon Wireless 3. PSAP to end text session.
Verification	1. Verify bounce back received from Verizon Wireless on initial test 2. Once service is activated verify canned bounce back is sent by PSAP. 3. Verify release message received by Texter.
Text time	Send to bounce back receive: 25 seconds
Notes	Test text from 562-233-XXXX at 11:01:≈00 Began with CSULB users logged in and service disabled at TCS. Bounce back received. CSULB users log out. Provisioned and enabled service by TCS. Test text from 562-233-XXXX at 11:06:≈00 Bounce back received at 11:06:≈25 CSULB users log in, service enabled at TCS. Test text from 916-698-XXXX. CSULB replied with manual identical bounce back. Message received by texter. End session initiated by CSULB.

CASE #2	Texter send 9-1-1 SMS text and routes to CSU Long Beach PD
Objective/ Description	This test verifies Text can be delivered to CSU Long Beach PD and rebid for location is functioning.
Resources	Texter in field and centroid within CSU Long Beach PD's jurisdiction. Call taker to receive text TCS to monitor text session
Test Setup	1. Verify Texter is ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available and logged into GEM911.
Procedure	1. Send a SMS text (starts with this is a test) to 911 to initiate a dialog. 2. Respond to the incoming RFA at the PSAP and send a few messages back and forth between the PSAP and mobile phone. 3. After 20 seconds rebid for location. 4. PSAP ends text session.
Verification	1. Verify the RFA is received by the PSAP configured for this test case. 2. Verify the transcript is received by the PSAP when the dialog connected, and location information is properly displayed and call back number displayed. 3. Verify all messages sent by the PSAP are sent to the mobile handset. 4. Verify all messages sent by the mobile are received by the PSAP. 5. Verify release message received by Texter.
Text time	Send to receive:
Notes	**VERY INCONSISTENT ON ABILITY TO REBID LOCATION** Test text from 949-677-XXXX (HTC One) at 11:38:21 Received in GEM at CSULB at 11:39:00 Rebid at 11:39:49 → time out. Initiated two more rebids and received time out each time. Location Agent is enabled on the phone and active Removed phone from building to outdoors in order to try again. Still received a time out. End session initiated by CSULB.

Notes	**TEST 2A:** Test text from 949-677-XXXX at 14:23:20 Received in GEM at CSULB at 14:23:52 33.79186, -118.10758, uncertainty 1316 meters Rebid at 14:24:36 → time out. Rebid at 14:25:50 → time out. Rebid at 14:27:22 → updated location received at 14:28:08 33.78431, -118.10927, uncertainty 14 meters Rebid again → time out. Rebid again → updated location received 33.78160, -118.10911, uncertainty 21 meters Texter continues to move to Lot 7 (known area outside of CSULB tower coverage). Session remains live and texter/call taker continue to exchange messages. Rebid at 14:32:31 →updated to correct location in Lot 7 End Session initiated by CSULB. New text sent from 949-677-XXXX with Lot 7. Bounce back received. **Test phone activates the Location Agent, which is visible as an app in use by the texter. Texter has the ability to deny the app's attempt to locate? Though active on the test phone, the GEM user often receives a time out when requesting updated location. The rebid function is not consistent in returning an updated location for the texter.**

Notes	**TEST 2B:** Texter is in Lot 8 within CSULB's jurisdiction and tower coverage area. Test text sent from 949-677-XXXX at 14:37:□06 Received in GEN at CSULB and replied to by call taker. Texter and call taker exchange messages. Rebid for updated location is initiated, agent is working on phone. Updated location received in Lot 8, 33.77858, -118.11175, uncertainty 28 meters. Texter is driving further off campus. Rebid again 14:46:□30 → updated location received 33.78510, -118.13398, uncertainty 128 meters Texter is at Carl's Jr. parking lot off campus. Rebid again → updated location received 33.78876, -118.14048, uncertainty 128 meters All GEM users logged out of the GEM system at 14:54:37 WITHOUT ending the current live text session. Texter sent message "1234 test" to 9-1-1 while all users are logged out of the GEM interface. Texter received a bounce back message. CSULB logged back in to the GEM interface. Test text sent at 14:56:38 from texter off campus, bounce back message received. CSULB GEM screen showed the previously active text session on screen once logged back in to the GEM interface. CSULB sent reply to the session on screen and received a "FAILED TO DELIVER" message on the screen. **Session auto cleared from the GEM interface after several minutes of being present after logging back in. The screen should auto clear the active session or given some indicator that the previously active session was ended automatically when the CSULB users logged out of GEM.** **Session appeared again on the GEM user screen some minutes after automatically clearing and was present in the active session section of GEM.** **CSULB sent another message to the texter and returned the "FAILED TO DELIVER" message again.** **Test text sent from 949-677-XXXX from the parking lot of the police department.** **Received in GEM at CSULB as a new session in the queue with the same phone number as the old session that is still displayed within the GEM interface.** **CSULB and texter exchange messages in new session, which works fine.** **New session automatically drops to the other active session section and the old session automatically disappears from the GEM interface.** **Again, the new session is brought back to the active session section by CSULB and the old session reappears within the active session section of GEM as well.** **What is the initiator for an active session to automatically drop to the other active sessions section? Should not move down unless the session is acted upon by another user or possibly unless another new session becomes active. TCS to investigate the action of active sessions automatically dropping into the other active session section of GEM with no other users logged into the GEM interface.**

CASE #3	**Texter sends SMS to 911, TCS TCC receives and provides routing instruction, Route to PSAP – CSU Long Beach PD does not respond to text**
Objective/ Description	This test verifies that TCC responds to an initial text that is not responded to by the PSAP with a canned message.
Resources	Texter in field within CSU Long Beach PD's jurisdiction. Call taker to receive text TCS to monitor text session Timer to time send receive time
Test Setup	1. Mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available. 4. Log into the GEM9-1-1 and be ready to answer an incoming 9-1-1 SMS text.
Procedure	1. Send a SMS to 911 to initiate a text session. 2. PSAP does not respond to initial text 3. After ?? seconds TCC send canned message to Texter. 4. If PSAP and Texter converse a couple of times and the PSAP goes silent for ?? seconds, will a canned message be sent to Texter?
Verification	1. Verify the RFA is received by the PSAP configured for this test case. 2. Verify the transcript is received by the PSAP when the dialog connected 3. Verify PSAP non response message received by Texter
Text time	Send to receive:
Notes	**Skip this test case. GEM911 currently does not have the functionality to send a bounce back message if the 9-1-1 text is not responded to by the PSAP within a set period of time.** **TCS has this on their development cycle list as an update to the product for the future.** **The PSAPs present recommend that 2 minutes be allotted for a reply from the PSAP prior to sending an automatic message. PSAPs also recommended that the session be terminated after the automatic bounce back is delivered to the texter.**

CASE #4	Two simultaneous SMS Text 911 from different users, Routed to CSU Long Beach PD
Objective/ Description	This test verifies that TCC can process the scenario of initiating two dialogs from different users with the delivery of the messages to CSU Long Beach PD.
Resources	2 SMS Texters in field within CSU Long Beach PD's jurisdiction. 1 9-1-1 Call Taker 2 timers
Test Setup	1. Two mobile phones activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available. 4. Log into the GEM911 and be ready to answer an incoming RFA.
Procedure	1. Initiate two dialogs by sending a SMS to 911 from two different mobile handsets simultaneously. 2. Respond to the two incoming RFAs at the PSAP and send a few messages back and forth between the PSAP and mobile handsets. 3. PSAP ends text session.
Verification	1. Verify that both RFAs are received by the PSAP configured for this test case. 2. Verify the transcript for each dialog is received by the PSAP when the dialog connected. 3. Verify all messages sent by the PSAP are sent to the mobile handset. 4. Verify all messages sent by the mobile handsets are received by the PSAP.
Text time	Text session 1 send to receive: 30 seconds Text session 2 send to receive: 30 seconds
Notes	Test texts from 916-698-XXXX and 916-202-XXXX at 11:18:20 Both texts received in GEM at CSULB at 11:18:50 Received message back from CSULB on both phones. 12 seconds send to receive on 2nd message set. 11 seconds to receive message back from CSULB to 916-698-XXXX. 3-4 seconds to receive next messages back from CSULB to 916-698-XXXX. 916-202-XXXX deleted the session from the phone and the next message from CSULB was received by the phone to continue the session. End sessions initiated by CSULB at 11:24:00.

CASE #5	**Three simultaneous SMS Text to 911 from different users, TCS TCC receives and provides routing instruction, 2 text Route to CSU Long Beach PD, 1 text receives a Bounce Back Message**
Objective/ Description	This test verifies that TCC can process the scenario of initiating two dialogs from different users with the delivery of the messages to CSU Long Beach PD, and the third texter should receive a bounce back message. CSU Long Beach PD provisioned with session limit of 2.
Resources	3 SMS Texters in field within CSU Long Beach PD's jurisdiction. 2 9-1-1 Call Taker
Test Setup	1. Three Verizon Wireless mobile phones 2. Verify TCC is provisioned and ready with session limit of 2 3. Verify the target PSAP is available. 4. Log into the GEM911 and be ready to answer an incoming RFA.
Procedure	1. Initiate three dialogs by sending a SMS to 911 from three different mobile handsets simultaneously. 2. Respond to the two incoming RFAs at the PSAP and send a few messages back and forth between the PSAP and mobile handsets. 3. PSAP ends Text session.
Verification	1. Verify that both RFAs are received by the PSAP configured for this test case. 2. Verify the transcript for each dialog is received by the PSAP when the dialog connected. 3. Verify all messages sent by the PSAP are sent to the mobile handset. 4. Verify all messages sent by the mobile handsets are received by the PSAP. 5. Verify third texter received a bounce
Text time	Send to bounce back receive: 38 seconds
Notes	Test texts from 916-698-XXXX, 916-202-XXXX, and 562-743-XXXX at 11:27:16 Texts sent simultaneously to 9-1-1 on count of three. 916-698-XXXX received in GEM at CSULB at 11:27:46 916-202-XXXX received bounce back at 11:27:54 562-743-XXXX received in GEM at CSULB at 11:27:58 Dialogue back and forth successful to both sessions. End sessions initiated by CSULB.
Notes	**TEST 5A:** Test texts sent from 562-743-XXXX, 916-202-XXXX, and 916-698-XXXX Texts sent sequentially as listed above with a pause between each send. 916-698-XXXX received in GEM at CSULB. 916-202-XXXX received bounce back. 562-743-XXXX received in GEM at CSULB. No priority is given to the order in which a text is sent to 9-1-1. End sessions initiated by CSULB. **CSULB reported an inconsistency in the GEM interface with the display of the message sent icon and the message delivered icon. A clock is displayed to indicate that the message has been sent. A check mark is displayed to indicate that the message has been delivered to the texter.** **However, the GEM interface is continuing to display a clock when the text has been received and responded to by the texter. Also, the check mark is changing back to a clock when the session drops down to the other active sessions section and then is pulled back up into the active sessions window. There is no consistency in the behavior, as it does not happen in all instances as described above.**

CASE #6	Text Conversation when device powered down powered back up
Objective/ Description	This test verifies the text conversation continues even if the mobile phone is powered down and turned back on within 240 minutes.
Resources	Texter in field within CSU Long Beach PD's jurisdiction 9-1-1 Call taker Timer
Test Setup	1. Mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available. 4. Log into the GEM911 and be ready to answer an incoming RFA.
Procedure	1. Send SMS to 911 to initiate a dialog 2. Respond to the incoming RFA at the PSAP and send a few messages back and forth between the PSAP and mobile 3. Mobile Phone User powers down mobile phone. 4. Mobile Phone User Powers on phone after waiting 5 minutes 5. PSAP verifies original SMS conversation is up. 6. Send SMS to continue same text session 7. Respond to the incoming RFA at the PSAP and send a few messages back and forth between the PSAP and mobile. 8. PSAP ends text session
Verification	1. PSAP verifies status of SMS conversation was continuous; verify no automatic message was delivered by PSAP or TCS because of time between text messages.
Text time	Send to receive:
Notes	Test text sent from 916-202-XXXX at 11:53:50 Received in GEM at CSULB. Message sent back from CSULB to texter and received by texter. Texter does not reply. 916-202-XXXX powered down phone. Another message is sent from CSULB. Phone is powered back up again. After several seconds the message sent by CSULB while phone was powered down is received by the texter and the indicator at CSULB changed to a check mark at that time indicating the message was delivered. End session initiated by CSULB.

CASE #7	**Texter initiates 9-1-1 text standing inside CSU Long Beach Jurisdiction but the centroid of the cell tower in different PSAP's jurisdiction**
Objective/ Description	This test verifies that the 9-1-1 SMS texter will receive a bounce back message when centroid is outside PSAP's jurisdiction.
Resources	Texter in field within CSU Long Beach PD's jurisdiction. 9-1-1 Call Taker
Test Setup	1. One mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available. 4. Log into the GEM911 and be ready to answer an incoming RFA.
Procedure	1. Initiate an SMS 9-1-1 text.
Verification	1. Verify that a bounce back message was received
Text time	Send to bounce back receive: 28 seconds
Notes:	Texter at the East Turnaround at East State University Drive and East Campus Road inside of the CSULB jurisdiction. Test text sent from 916-202-XXXX at 14:10:31 Received in GEM at CSULB at 14:10:57 → failed test Texter at Lot 8 on East Campus Road inside of the CSULB jurisdiction. Test text sent from 916-202-XXXX at 14:12:55 Received in GEM at CSULB at 14:13:17 → failed test Texter at Lot 7 on East Campus Road inside of the CSULB jurisdiction. Test text sent from 916-202-XXXX at 14:15:34 Texter received the bounce back message at 14:16:02 → test passes Messages received back and forth between the parties. End session initiated by CSULB. First two tests hit sector 1158. Final test hit sector 1960.

CASE #8	**Texter initiates 9-1-1 text standing outside CSU Long Beach jurisdiction but the centroid of the cell tower is in CSU Long Beach PD's jurisdiction**
Objective/ Description	This test verifies that the 9-1-1 SMS text will be delivered to CSU Long Beach PD.
Resources	Texter in field within CSU Long Beach PD's jurisdiction. 9-1-1 Call Taker
Test Setup	1. One mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available. 4. Log into the GEM911 and be ready to answer an incoming RFA.
Procedure	1. Initiate an SMS 9-1-1 text. 2. PSAP respond back to texter 3. Exchange a few text 4. PSAP end text
Verification	1. Verify that 9-1-1 SMS text is received by CSU Long Beach PD 2. Verify the transcript for each dialog is received by the PSAP when the dialog connected. 3. Verify all messages sent by the PSAP are sent to the mobile handset. 4. Verify all messages sent by the mobile handsets are received by the PSAP.
Text time	Send to receive: 29 seconds
Notes	Texter at the 7-Eleven at 1785 Palo Verde Ave outside of the CSULB jurisdiction. Test text sent from 916-202-XXXX at 14:05:34 Received in GEM at CSULB at 14:06:03 Messages received back and forth between the parties. End session initiated by CSULB.

CASE #9	Texter initiates 9-1-1 text while GEM911 is minimized
Objective/ Description	This test verifies audio tone is heard when GEM911 web browser is minimized at CSU Long Beach PD.
Resources	Texter in field within CSU Long Beach PD's jurisdiction. 9-1-1 Call Taker
Test Setup	1. One mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available. 4. Log into the GEM911 and minimize GEM911 web browser
Procedure	1. Initiate an SMS 9-1-1 text. 2. PSAP respond back to texter 3. PSAP end text
Verification	1. Verify that 9-1-1 SMS text and Audio tone is heard by CSU Long Beach PD 2. Verify the transcript for each dialog is received by the PSAP when the dialog connected. 3. Verify all messages sent by the PSAP are sent to the mobile handset.
Text time	Send to receive: 24 seconds
Notes	**ONLY AUDIO ON UNANSERED TEXT, NOT ON EACH TEXT REPLY** Test text send from 916-202-XXXX at 12:04:04 Received in GEM at CSULB at 12:02:28 Window was minimized at CSULB. Sound queue was heard at the CSULB workstation when the text was received. End session initiated by CSULB. **The audio tone is only available on the unanswered text received by a texter to 9-1-1 and is audible when the GEM window is minimized or on top of the screen. Once the call-taker has replied to a text, additional texts within the same session do not receive an audio tone on the call taker workstation. The only indicator of an update within the GEM interface is a numeral next to the phone number of the texter in the GEM interface indicating the number of unread messages waiting.** **The request for an audio tone on each message is a known request and is in the development queue with TCS.**

CASE #10	Add number to Deny List
Objective/ Description	This test verifies when a number is added to the deny list they will receive a bounce back message
Resources	Texter in field within CSU Long Beach PD's jurisdiction. 9-1-1 Call taker
Test Setup	1. One mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available. 4. Log into the GEM911 and minimize GEM911 web browser
Procedure	1. Add 562-233-XXXX to the deny list 2. Initiate an SMS 9-1-1 text
Verification	1. Verify that 9-1-1 SMS texter receives a bounce back message
Text time	Send to receive:
Notes	CSULB add 562-233-XXXX to the deny list via the GEM admin tool at 14:20:00 Test text from 562-233-XXXX following the addition to the deny list. Standard bounce back message was received by the texter.

CASE #11	Time of Day Setting
Objective/ Description	This test verifies when a time of day rule is added to the PSAP PRF subscriber will receive a bounce back message
Resources	Texter in field within CSU Long Beach PD's jurisdiction. 9-1-1 Call taker
Test Setup	1. One mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available. 4. Log into the GEM9-1-1
Procedure	1. Setup PSAP for Time of Day Rule through the GEM9-1-1 Admin Tool - close PSAP for Wednesday, 11/20/13 until midnight. 2. Initiate an SMS 9-1-1 text
Verification	1. Verify that 9-1-1 SMS texter receives a bounce back message
Text time	Send to receive:
Notes	CSULB initiated a time of day rule via the GEM admin tool at 12:10:00 Time of day rule was set beginning at 12:00:00 and end at 14:00:00 The time of day rule was initiated for the test lunch break period as a TCS user account remained logged in once the test group broke for lunch. Test texts sent from 916-202-XXXX and 916-698-XXXX after the time of day rule was initiated. Standard bounce back received by both texters.

CASE #12	GEM9-1-1 with no users logged in
Objective/ Description	This test verifies that the subscriber will receive a bounce back message when PSAP is not logged in on GEM9-1-1.
Resources	Texter in field within CSU Long Beach PD's jurisdiction. 9-1-1 Call taker
Test Setup	1. One mobile phone activated and ready 2. Verify TCC is provisioned and ready 3. Verify the target PSAP is available.
Procedure	1. Verify that no users are logged in on GEM9-1-1 via the GEM9-1-1 Admin Tool. 2. Initiate an SMS 9-1-1 text
Verification	1. Verify that 9-1-1 SMS texter receives a bounce back message
Text time	Send to receive:
Notes	**See CASE #1 results as well as results recorded under CASE #2A and 2B.**